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Statement of Dr. Michael J. Pallansch
Chief Scientist
Science and Education Administration
U. S. Department of Agriculture
before the
Subcommittee on Dairy and Poultry
Committee on Agriculture
House of Representatives
July 24, 1979

U.S. DEPARTMENT OF AGRICULTURE
NATIONAL ARCHIVES
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Reserve
Mr. Chairman, I appreciate the opportunity to testify before this
Subcommittee on House Resolution 230.

This Resolution requests the Secretary of Agriculture to assess the whey supply situation and advise the Committee on Agriculture of the House of Representatives of his findings. It also urges the Department of Agriculture to increase research programs to utilize whey more effectively for the mutual benefit of both producers and consumers.

The Department does not recommend approval of H. Res. 230.

The Department shares the concerns that motivate the introduction of resolutions such as this one. However, we believe that this legislation is not necessary because the Department is addressing the provisions of the resolution. The Department is constantly monitoring the supply situation of all agricultural commodities, and publishes this market information on a continuous basis. Beginning in early 1975, the Statistical Reporting Service (now Economics Statistics and Cooperatives Service - ESCS) greatly expanded its reporting by providing additional detail on production and by providing statistics on stocks and prices of many different whey products. Furthermore, the Science and Education Administration's (SEA) scientists at the Department of Agriculture are working on ways to expand markets for whey by identifying and developing new products.

Department of the Interior
 Bureau of Reclamation
 Division of Conservation
 Washington, D. C.
 January 14, 1939

Mr. [Name], I appreciate the opportunity to reply to your letter.

Enclosed for your information are

This document represents the Bureau of Reclamation's position on the proposed project. It also shows the Bureau's position on the project's location and the Bureau's position on the project's design. It also shows the Bureau's position on the project's construction and operation.

The Bureau has not yet received your letter of January 10, 1939.

The Bureau is currently reviewing the project's design and construction plans. We are also reviewing the project's location and the project's design. We are also reviewing the project's construction and operation. We are also reviewing the project's location and the project's design. We are also reviewing the project's construction and operation.

Approximately 16 scientist years have been devoted to whey research in recent years. During this Fiscal Year, we plan to spend \$1,032,000 on whey research. The FY 1980 budget request for whey research is \$142,700; however, both Congressional Appropriations Committees have authorized a level of \$632,600. The budgeted reduction reflected the pressure to fund changing priorities within limited resources, as well as the status of the industry's utilization of current research.

The development of commercial processing techniques to convert whey to a variety of food and feed products has outrun the industry's ability to find markets for these materials. For example, the Department has assisted in the industrial development of a new method to dry cottage cheese whey and to use membrane technology for the concentration and fractionation of whey.

Whey is a by-product from the manufacture of cheese. Different types of cheese yield different types of whey, which presents a variety of problems in processing. Each pound of hard cheese yields about 9 pounds of liquid sweet whey, and each pound of cottage cheese yields about 6 pounds of liquid acid whey. The nutritive value of whey is quite high. It contains approximately 6 percent solids, about one-half the total solids in whole milk. The most valuable constituent of whey is protein, which amounts to 20 percent of the original protein in milk. Liquid whey contains almost all the vitamins and minerals of the whole milk. The composition of whey solids is about 70 percent lactose, 14 percent protein, 9 percent minerals, 4 percent fat, and 3 percent lactic acid.

Increasing supply of liquid whey

The production of hard cheese has increased from 1,191 million pounds in 1950 to 3,359 million pounds in 1978 (2.8 times). The production of creamed cottage cheese increased from 352 million pounds to 878 million pounds during this same time period (2.5 times). This has resulted in an almost threefold increase in the supply of liquid whey from 1950 through 1978, from 12 billion pounds to 36 billion pounds.

Environmental Considerations

Pollution control requirements have had strong impacts upon the cheese industry. Many cheese plants formerly discharged whey into streams. More stringent clean water standards generally prohibit its disposal into waterways. Many localities also prohibit disposal through municipal sanitation systems. Therefore, cheese manufacturers have been faced with increasing costs of disposal, installing costly whey drying equipment, or transporting liquid whey to a dryer. Such facilities have constituted a substantial portion of new plant and equipment investment by cheese manufacturers in the past decade.

Close Substitution of Whey for Nonfat Dry Milk

Because of the environmental problems, research has been conducted on uses for whey. Liquid whey may be processed into condensed, dried, lactose, or wet blend products. These compete directly with solids in nonfat dry milk as an ingredient for food or feed.

The total supply of nonfat dry milk has exceeded commercial demand during most years. The production of nonfat dry milk has generally declined, 59 percent from 1964 through 1978. The commercial use for nonfat dry milk has also declined.

Until the early 1970's, prices of nonfat dry milk were so low that competition from other products was limited. However, subsequent price increases have resulted in many users looking for substitutes such as whey powder.

The substitution of whey for nonfat dry milk will remain a mixed blessing for the dairy industry as a whole until supplies of nonfat dry milk can be completely absorbed in commercial outlets. Meanwhile, nonfat dry milk replaced by whey must be purchased by the Commodity Credit Corporation (CCC) under the dairy price support program. Gains from the increased utilization of whey are a reduction in industry's cost of pollution control, an addition to the domestic supply of high-quality food, and lower food costs.

Food and Feed Utilization

The total output of whey products (whey solids content) has increased at least 56 percent from 1970 to 1978. These products have utilized an average of slightly over 50 percent of all liquid whey in the 1970's. The remainder of the liquid whey is spread on fields for fertilizer, used in liquid form for animal feed, or simply dumped in streams or municipal sewage systems. However, there has often been a wide variation in yearly whey utilization in response to the fluctuating market price of dry whey products. In 1978, of 2.4 billion pounds of whey solids produced as a by-product of cheese, 1.3 billion pounds were utilized (55 percent). This compares to 1977 where of 2.3 billion pounds produced, only 1.2 billion were utilized (51 percent).

During the first 5 months of 1979, total dry whey production was about 397 million pounds, up 2 percent from a year earlier. Dry whey for human use totaled 229 million pounds (up 2 percent), modified dry whey for human use totaled 37 million pounds (up 17 percent) and dry whey for animal feed totaled 132 million pounds (down 5 percent).

Dry whey solids manufactured has increased from 156 million pounds in 1950 to 917 million pounds in 1978, and increase of almost six times (table). During this same period, the dry whey solids accounted for an increasing proportion of liquid whey, from 19 percent in 1950 to 35-40 percent in the 70's. However, because of the increasing supplies of liquid whey the liquid whey not utilized in dry whey products increased from 673 million pounds in 1950 to 1,506 million pounds in 1978.

Although the product is quite nutritious, the high water content makes it costly to dry. When solids are in short supply it has been profitable to produce dry whey. However, increasing volumes of liquid whey, together with increased pressure to assure that it meets pollution control standards, have led to substantial increases in dry whey, even though recurring low prices have not encouraged whey drying. Often it has been a matter of minimizing costs rather than maximizing profits.

There has historically been wide variation in market prices of whey products in response to supply-demand conditions and prices of competing nonfat dry milk prices. For example, the price of edible whey powder in Wisconsin averaged 7.6 cents per pound in 1976, 14 cents in 1978, and 10.4 cents during the first six months of 1979. Dry whey prices often do not cover the costs of processing which are estimated at 8 to 9 cents per pound.

At the end of May, manufacturers' stocks of total whey products were almost 51 million pounds, up 13 percent from a year earlier. Whey prices have reflected the larger production and stocks levels. Wisconsin prices of edible whey during the first six months of 1979 averaged 10.4 cents per pound, down 28 percent from a year earlier. During the same period, prices of whey for animal feed averaged 9 cents per pound, down 31 percent.

In conclusion, Mr. Chairman, we support the general intent of House Resolution 230 to find ways of utilizing whey more effectively for the mutual benefit of both producers and consumers. However, it is our position that our current expanded program of statistical reporting and our present program of research are meeting public needs. It is our judgment that increased appropriations for such research would not be the most effective use of public funds.

Thank you for the opportunity to testify. I will be glad to answer any questions you may have about these matters.

